

Preliminary Ecological Appraisal Survey

Ham Polo Club, Richmond upon Thames, Greater London TW10 7AH

ARK Environmental Consultancy Ltd

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Guidelines

This assessment has been designed to meet:

- Chartered Institute of Ecology and Environmental Management 'Guidelines for Preliminary Ecological Appraisal Second Edition, December 2017'; and
- British Standard 42020 (2013) 'Biodiversity Code of Practice for Planning and Development'.

Proportionality

The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.

This approach is enshrined in Government planning guidance, for example, the National Planning Policy Framework for England 2019 paragraphs 174 and 175. The desk studies and field surveys undertaken to provide a preliminary ecological appraisal (PEA) might in some cases be all that is necessary. (BS 42020, 2013)

In consequence of the scale and intensity of the proposed development, the low impact on ecological receptors identified through both the site survey and search of local biological records, and the passive interface with the mitigation hierarchy, this plan-led report is considered adequate and proportionate. It communicates all relevant information necessary to determine a planning application or support the recommendations for further surveys.

Executive summary

Arbtech Consulting Ltd was instructed by ARK Environmental Consultancy Ltd to undertake a Preliminary Ecological Appraisal (PEA) and Preliminary Badger Survey at Ham Polo Club, Petersham Road, Petersham, Richmond upon Thames, Greater London TW10 7AH. The survey visit was completed on 3rd July 2021. The aim of the survey was to complete an extended Phase 1 Habitat Survey of the survey area and all land that will be impacted by the proposal, and to determine the presence/likely-absence of badgers on site or the presence of badger setts within a 30m radius of the proposed development works.

This report is prepared to inform a planning application with London Borough of Richmond upon Thames. The development is described as:

• Extension of existing sand arena.

Recommendations - This is work you will need to commission (if any) to obtain planning permission or comply with legislation for other consent. (Further details from p.11).

Ecological Factor	Recommendations
Badgers	No badger setts were located on site or within a 30m radius of the site's boundaries during the survey. Although badger populations are dynamic and badger
	setts are known locally, the habitat within the development area is considered to offer negligible value for sett building due to its level ground and lack of
	suitable shelter for badgers, making it highly unlikely a badger sett could be present within the site at any time of year. The site boundaries were inspected
	for evidence of badger use, e.g. outlier holes, trace hairs, latrines, snuffle marks and mammal trails, of which there are none. Existing trees and posts show
	no evidence of use by badgers as scratch posts. The area to be impacted by the works offers negligible foraging resources for this species. Consequently, no
	further surveys are recommended; however, precautionary methods of working are given in the evaluation table (please refer to section 4.2, p.12) to prevent
	any harm to badgers likely to be present in the more suitable habitats off-site and which could commute across the development area during the works. In
	addition, recommendations are given to enhance the wider site for foraging badgers, in line with the Local Authority's duty under the NPFF (2019).
	Lighting mitigation will not be required as no new lighting scheme is proposed.
Trees	The site is located within a Conservation Area and forms part of an adjacent SNCI. Due to the scale of the proposed works, no impact on these habitats will
	result. The habitats to be impacted by the works are considered to be of low ecological value, comprising of species poor, nutrient-improved grass and an
	equestrian sand arena, and therefore require no particular mitigation. However, there are notable treelines, including an avenue of mature limes associated
	with Ham House as well as a number of scattered mature horse chestnut trees located within 15m of the devlopment boundary. The project is not due to
	impact the trees directly but could impact the roots. (80% of tree roots are present within the top meter of soil). Significant roots, (roots with a diameter of
	3cm or more), could be impacted by the construction of the new fence. A full arboricultural assessment following the guidance of the British Standard
	BS5837:2012 'Trees in relation to design, demolition, and construction' is required. This will include a full survey of all trees within the site and within
	influencing distance of the site, along with an arboricultural impact assessment, tree protection and arboricultural method statement, if required.

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1.0 Introduction and Context

1.1 Background

Arbtech Consulting Ltd was instructed by ARK Environmental Consultancy Ltd to undertake a Preliminary Ecological Appraisal (PEA) and Preliminary Badger Survey at Ham Polo Club, Petersham Road, Petersham, Richmond upon Thames, Greater London TW10 7AH. The survey visit was completed on 3rd July 2021. The aim of the survey was to complete an extended Phase 1 Habitat Survey of the survey area and all land that will be impacted by the proposal, and to determine the presence/likely-absence of badgers on site or the presence of badger setts within a 30m radius of the proposed development works. No previous ecology reports in relation to this proposal have been prepared by Arbtech.

1.2 Site Context

The survey site is centred on National Grid Reference TQ 1734 7316 and has an area of approximately 3000m². The survey site consists of an equestrian sand area with timber fencing and approx. 2000m² of improved grass with boundary trees. The site is located at the north-west boundary of Ham Polo Club. The adjacent habitats comprise equestrian sports fields, pavilions, stables and open grassland. Ham House and formal gardens are adjacent to the west. The River Thames is approx. 150m north of the site.

1.3 Scope of the report

This report describes the baseline ecological conditions at the site; evaluates habitats within the survey area in the context of the wider environment; and describes the suitability of those habitats for notable or protected species. It identifies significant ecological impacts as a result of the development proposals; summarises the requirements for further surveys and mitigation measures, to inform subsequent mitigation proposals, achieve Planning or other statutory consent, and to comply with wildlife legislation.

The aim of the PEA was to obtain data on existing ecological conditions, and to conduct a preliminary assessment of the likely significance of ecological impacts on the proposed development. Establishing the baseline conditions for future monitoring. To achieve this, the following steps were taken:

- The desk study area and field survey area (generally 50m from the site boundary/proposed footprint and including the 'zone of influence' of the scheme) have been identified
- A desk study has been carried out.
- Baseline information on the site and surrounding area has been recorded through an 'extended phase 1 habitat survey', including a phase 1 habitat survey (JNCC 2010) and recording further details in relation to notable or protected habitats and species.
- The ecological features present within the survey area have been evaluated where possible (CIEEM, December 2017).
- Invasive plant and animal species (such as those listed on Schedule 9 of the Wildlife & Countryside Act) have been identified.
- Likely impacts on features of value, as a result of the development proposals, have been identified.
- Recommendations for further survey and assessment have been made.
- Recommendations for mitigation and opportunities for enhancement have been provided based on current information.
- The purpose of the badger survey is to search for evidence of badger use and locate any extant badger setts. The survey will qualify and quantify, as far as is possible, badger activity and recommend an appropriate course of action if deemed necessary.

A survey plan is presented in Appendix 1, proposed plans in Appendix 2 (where available), desk study results in Appendix 3 and a summary of relevant legislation is presented in Appendix 4.

1.4 Project Description

This report is prepared to inform a planning application with London Borough of Richmond upon Thames. The development is described as:

• Extension of existing sand arena.

2.0 Methodology

2.1 Desk Study methodology

The desk study informing the survey conclusions consists of a review of nearby statutory and non-statutory designated sites, biodiversity action plan (BAP) priority habitats and granted EPSML records held on the Magic database. An assessment of the surrounding landscape structure was also completed using aerial images from Google Earth and OS maps.

The client was advised by Arbtech that biological records data, (BRD) are unlikely to contribute to this assessment, in this instance, owing to the negligible habitat on site for protected species. Given the nature of the habitats to be impacted by the works it is considered that an adequate assessment of the site can be made and BRD will not be required for this report. The local planning authority, (LPA) may request that local records are obtained and these can be incorporated into the report at a later date and will be summarised in the Evaluation section 4.2.

2.2 Site Survey methodology

The survey was undertaken by Josephine McCarthy Ecological Consultant, (Natural England Protected Species Licence Numbers: [Bats] 2019-41480-CLS-CLS).

Preliminary ecological appraisal methodology:

The methodology for the Phase 1 habitat survey is based on the best practice publication Phase 1 Habitat Survey Methodology (JNCC, 2010). All land parcels are described and mapped according to JNCC Phase 1 habitat classification (see site map in Appendix 1). Where appropriate, target notes provide supplementary information on habitat conditions, features too small to map to scale, species composition, structure and management.

During the survey, habitats were assessed for their suitability to support protected species, and field signs indicating their presence recorded. The assessment takes into consideration the findings of the desk study, the habitat conditions on site and in the context of the surrounding landscape, and the ecology of the protected species. The likelihood of the presence of protected species is ranked; the habitats on site are evaluated against their likelihood to provide suitable habitat for protected species.

All features that will be impacted by the project proposals were assessed for their bat roosting and/or commuting habitat. The surveyor systematically surveyed all features suitable for bats and signs of bat activity.

The ecological value of the survey area has been assessed based on the Guidelines for Ecological Impact Assessment (CIEEM, 2006), and the Handbook of Biodiversity Methods: Survey, Evaluation and Monitoring (David Hill, 2005), using geographic frames of reference. The biodiversity value of any identified designated sites, habitat types and associated species assemblages has been considered. The distribution and extent of invasive species listed on Schedule 9 of the Wildlife and Countryside Act (1981) were also noted throughout the survey area.

2.3 Suitability Assessment

The habitats on site were evaluated as to their likelihood to provide sheltering, roosting, foraging, basking or nesting habitat. The likelihood of the occurrence of protected species is ranked according to the criteria listed in Table 1 below.

Table 1: showing criteria considered when assessing the likelihood of occurrence of protected species

Present	Species are confirmed as present from the current survey or historical confirmed records.
High	Habitat and features of high quality for species/species assemblage. Species known to be present in wider landscape (desk study records). Good quality surrounding habitat
	and good connectivity.
Medium	Habitat and features of moderate quality. The site in combination with surrounding land provides all habitat/ecological conditions required by the species/assemblage.
	Within known national distribution of species and local records in desk study area.
	Limiting factors to suitability, including small area of suitable habitat, some severance/poor connectivity with wider landscape, poor to moderate habitat suitability in local
	area.
Low	Habitats within the survey area poor quality.
	Few or no records from data search.
	Despite above, presence cannot be discounted as within national range, all required features/conditions present on site and in surrounding landscape.
	Limiting factors could include isolation, poor quality landscape, or disturbance.
Negligible	Very limited poor-quality habitats and features.
	No local records from desk study; site on edge of, or outside, national range.
	Surrounding habitats considered unlikely to support species/species assemblage.

2.4 Limitations – evaluation of the methodology

It should be noted that whilst every effort has been made to describe the baseline conditions within the survey area, and evaluate these features, this report does not provide a complete characterisation of the site. This assessment provides a preliminary view of the likelihood of protected species being present. This is based on suitability of the habitats on the site and in the wider landscape, the ecology and biology of species as currently understood, and the known distribution of species as recovered during the searches of historical biological records.

> There were no limitations to the survey. The survey site was fully accessible during the survey; therefore, the results of the survey are considered an accurate baseline to support the conclusions and recommendations of the report.

3.0 Results and Evaluation

3.1 Desk Study Results

The desk study methodology as outlined in 2.1 has been carried out, and any relevant findings regarding sites, habitats or species will be incorporated into the conclusions and recommendations section of this report (4.2) for ease of reading.

3.2 Field Survey Results

The site of the proposed development is briefly described as an equestrian sand area with timber fencing and approx. 2000m² of improved grass with boundary trees.

Table 2: Weather conditions during the survey

Date: 03/07/2021				
Temperature	19.6°C			
Humidity	99%			
Cloud Cover	90%			
Wind	6.5km/h			
Rain	Light rain			

3.3 Site descriptions and photos

Phase 1 habitat codes in brackets when they first appear in text.

The current land use within the development area is a sand arena, [J4] and an adjacent area of improved, species-poor grass, [B4]. The sward is subject to intensive management and is maintained to a short height to facilitate the passage of horses on a regularly basis. There is no structural diversity within the sward and no forb species are present.

A narrow border of tall ruderals, [C3.1] occurs between the sand area and the sward, dominated by common nettle and yarrow with red dead-nettle, thistles and white campion, likely to provide some value for moths and other pollinators. Within this border area are sycamore and hazel saplings, and a mature elder which is in decline. Elm and hawthorn saplings are encroaching from a gappy area of scrub on the east boundary. [A2].

A mature deciduous tree line, [A3.1], dominated by lime but with occasional horse chestnut forms the west site boundary. The lime trees form part of a mature avenue of lime trees within a conservation area. The treeline provides an established linear feature on the landscape for commuting bird and bat species.

The low-level boundary vegetation and adjacent area of less intensively managed grassland within the SNCI, (northwest of the site) will provide foraging resources and refuge for a range of wildlife species including badgers, bats and other small mammals, bringing them in close proximity to the development area. These species could use the development site for commuting between more suitable habitats.

Site photos follow:

3.4 Site photos

The survey site consists of an equestrian arena and an associated area of improved grassland with deciduous treelined boundaries. Tall ruderal species and bramble scrub are found within the site and on the east boundary.



Looking north-east across the existing sand arena from the south-west boundary.



Looking east along the southern boundary of the sand arena, with the area of improved grass to be impacted by the works pictured on the right.



Looking south across the sward to be impacted and showing the mature treeline boundary, on the right in this picture.



Showing the north boundary of the existing sand area.



Looking west towards the mature off-site trees on the west boundary.



The east boundary comprises scattered trees and scrub. All boundary vegetation will be retained.

4.0 Conclusions, Impacts and Recommendations

4.1 Informative guidelines

Likelihood of the presence of protected species

Where physical evidence of the presence of protected species is indeterminate during the survey, the habitats on site are evaluated as to their likelihood to provide sheltering, roosting, foraging, basking or nesting habitat. The likelihood of occupancy of protected species is ranked according to the criteria listed in Table 1.

Where this report supports a planning application, the ecological interest of the study area (including the survey area) and the proposed development has also been evaluated in terms of the planning policies relating to biodiversity. It is clearly stated where a preliminary value can be given and where further information is required.

Appropriate justification for this assessment is provided in Section 2.3 and Table 1 of this report.

4.2 Evaluation

Taking the desk study and site survey results into account, the following conclusions for ecological factors has been reached.

Table 7: Evaluation of site

Ecological	Survey assessment conclusions	Foreseen impacts	Recommendations	Enhancements
Factor	(with justification)			The Local Planning Authority has a duty to
				ask for enhancements under the NPPF
Designated	The site itself is not subject to any	No impacts foreseen on	N/A	N/A
sites	statutory designation, although	designated sites due to the		
	the site falls within a local wildlife	nature, location, size and scale of		
	site (SNCI) with associated	the proposed development as		
	grassland habitats adjacent to the	currently described.		
	northwest of the proposed			
	development area.			
Notable	No priority habitats or ancient	No direct impacts on the trees or	Retained trees on site will need to be protected in	Enhancement can be achieved by the
habitats and	woodlands are found on site or	on the boundary vegetation	line with BS5837:2012.	infill planting of the gappy hedgerows
plants	within the zone of influence of	which do not form part of the	A full arboricultural assessment, following the	along the east site boundary and tree
	the works. However, there are	proposals and will be retained.	guidance of the British Standard BS5837:2012	within treelines on the wider site. In

	trees within influencing distance	Additional habitat boxes for	'Trees in relation to design, demolition and	addition, the installation of bird and bat
	which will require a tree survey	protected species and wildlife	construction' is recommended. This will include a	boxes for site specific species is
	and impact assessment to show	friendly planting on the wider	full survey of all of the trees within the site and	recommended.
	how the root protection zones	site will compensate for the loss	influencing distance of the site, along with an	A variety of native tree species can be
	will be managed during the	of improved grass and will raise	arboricultural impact assessment, tree protection	planted and should include some of the
	works.	the ecological value of the site	and arboricultural method statement, if required.	following; hawthorn, crab apple,
		above its current baseline.		blackthorn, buckthorn, elder, wayfaring
			Compensation for the loss of amenity grassland	tree or guelder rose. Goat and Grey
			when the existing sand arena is extended, will	willow could also be planted on site as
			include the creation of new habitats on the wider	these species will provide a vital early
			site as there is little scope for enhancements within	source of pollen for honeybees.
			the development area.	Hedgerows should also include woody
				climbers such as Ivy, honeysuckle and
				bryony. Management will need to
				include annual trimming but allowing
				species such as hawthorn that fruit on
				the previous year's growth to remain
				uncut in alternate years. (Habitat boxes
				for birds and bats are recommended
				below).
Invasive /	No invasive and non-native	Butterfly bush can spread rapidly	No further surveys but remain vigilant.	Manage butterfly bush by removing seed
Non-native	species recorded on site;	through a site, crowding out	Butterfly bush is not a Schedule 9 invasive species	heads to prevent its spread.
species	although, a Butterfly	native vegetation. However, it	and there is no legal obligation to control it. In the	
	bush <i>Buddleja davidii</i> was noted	does provide habitat value to	context of this site it is likely to be of benefit rather	
	on the north site boundary.	pollinating species.	than harm and can be left in situ if desired.	

Invertebrates	No habitats present on site for	None foreseen.	No further surveys required.	The creation of long grass or nectar rich
	protected or notable invertebrate			meadow areas on or around the site
	assemblages although these are			would be of benefit to these taxa, as
	likely to occur locally and in			would log and stone piles in sunny areas.
	adjacent habitats.			
				Stag beetles are known locally and
				loggeries of several semi-sunken vertical
				logs would provide habitat benefit to the
				existing local population.
				However insect friendly planting may be
				problematic in close proximity to horses.
Bats	There is no bat roosting habitat	None foreseen.	No further surveys required.	A range of bat boxes could be installed on
	within the development area.	No loss of habitat for bats will	No lighting should be allowed to shine into the tree	trees across the site, between 3-5m in
	Bats are likely to commute across	occur and no changes to the	lines or adjacent habitats and any change to the	height, on the south or south-east side of
	the site given the adjacent	current lighting scheme are	existing lighting scheme may require consultation	trees or on onto any appropriate building
	habitats and tree lines which	proposed.	with the LPA.	where elevations have clear flightpaths,
	could be used for foraging and			away from lighting.
	commuting by a range of bat			Install at least one of the following:
	species.			-
				Schwegler 2F Bat Box Schwegler 1FF Bat Box
				Schwegler 2FN Bat Box
				Improved Cavity Bat Box
Birds	No evidence of nesting birds was	No impacts foreseen. The	Any future works on buildings and vegetation on	Install woodcrete bird boxes with a range
	found during the survey;	boundary vegetation will be	the wider site, and any management of the	of hole diameters on retained trees or at
	however, birds could use the	retained.	development site boundaries, should be undertaken	the eaves of any existing buildings on the
	vegetation on site for nesting.		outside the period 1st March to 31st August. If this	wider site.

		transient badgers which could be		badgers.
Mammals	site, although they could	development may impact		site to increase foraging value for
Terrestrial	No badger setts were found on	None foreseen, although the	No further surveys.	Fruit trees could be planted in the wider
Other	Badgers	Badgers	Badgers	Badgers
	any time of year.			
	unlikely to be present on site at			
	aquatic habitat they are very			
	close by. Therefore, without the			
	amphibians and there is neither			
	or aquatic value for protected			
Amphibians	The survey site has no terrestrial	None foreseen.	No further surveys.	N/A
	the survey site for reptiles.			
Reptiles	There is no suitable habitat on	None foreseen.	No further surveys required.	N/A
				Or 1 x Schwegler 1B nest boxes 32mm.
				Schwegler 2H Open Fronted Robin Box.
				habitat for a range of species. E.g.
				trees on the wider site to provide nesting
				A variety of bird boxes could be added to
			active nests until the young have fledged.	
			should be created between any machinery and	provide for up to three sparrow families.
			in nests being abandoned). At least a 3-5m buffer	elevations of a building. This would
			disturbance to nesting birds. (Disturbance can result	mounted on one of the more sheltered
			when working close to any nests so as not to cause	SCHWEGLER 1SP SPARROW TERRACE be
			should be taken with machinery and noise levels	It is recommended that at least one
			prior to the commencement of works. Precautions	1 x 1SP Schwegler Sparrow Terrace.
			the vegetation should be undertaken immediately	3 x No. 10 Schwegler Swallow Nest Cups
			timeframe cannot be avoided, a close inspection of	Install:

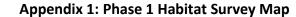
	commute across it to and from	caught in the construction site	However, the following recommendations are given	
	other areas.	etc.	in order to mitigate against potential harm to	
			badgers during the development works.	
			Any trenches dug should either be	
			covered at night or have a rough sawn	
			plank placed in them to act as a ramp	
			for any wildlife which may fall in.	
			 Temporary lighting to be directed away 	
			from the undergrowth.	
			Any chemicals or pollutants used or	
			created by the development should be	
			stored and disposed of correctly	
			according to COSHH regulations.	
	Water Vole	Water Vole	Water Vole	Water Vole
	No habitat Value.	None foreseen.	No further surveys.	N/A
ļ	Otter	Otter	Otter	Otter
	No habitat Value.	None foreseen.	No further surveys.	N/A
ļ	Dormouse	Dormouse	Dormouse	Dormouse
	No suitable habitat on site. No	None foreseen.	No further surveys.	N/A
	areas of woodland or foraging			
	plants are present for this			
	species.			
	Hedgehogs	Hedgehogs	Hedgehogs	Hedgehogs
	The wider site and its boundaries,	No direct impacts on hedgehogs	No further surveys.	Permeability of fences is essential to
	as well as adjacent habitats have	foreseen.	The badger mitigation above will also protect	retain commuting routes, and 13cm² gaps
	value for commuting and foraging		hedgehogs.	should be included frequently in any
	hedgehogs.			

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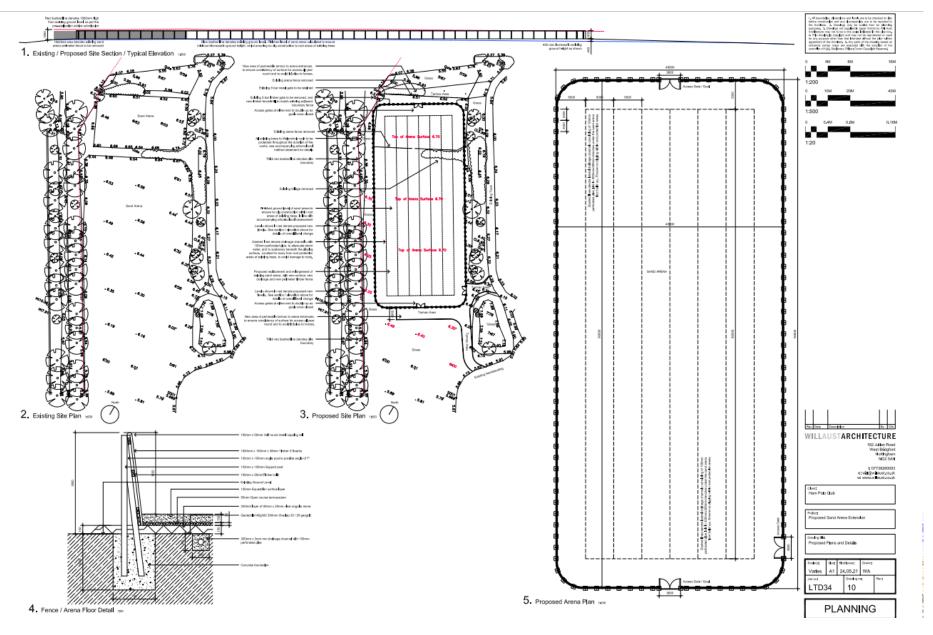
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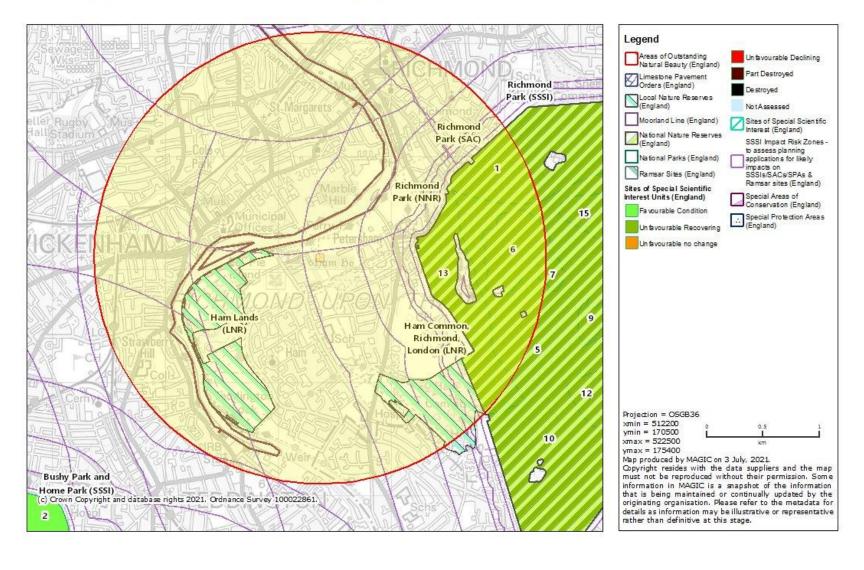
Appendix 2: Proposed Site Plan



Appendix 3: Desk Study Information

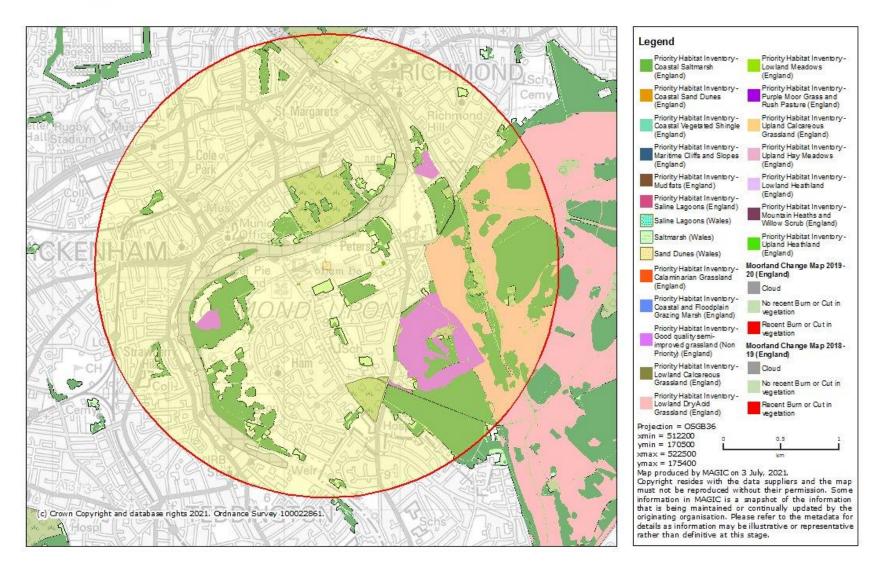


Designated sites



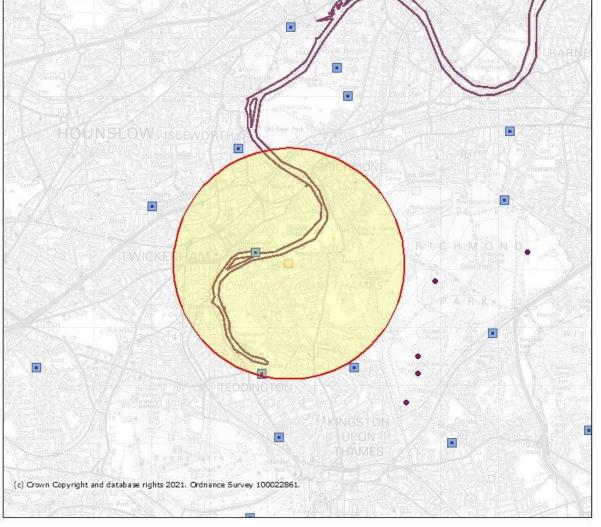


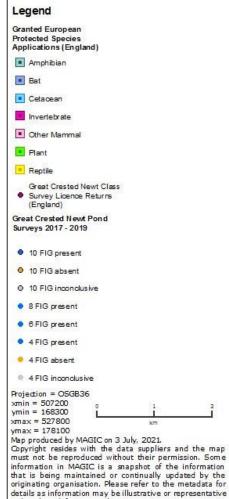
Habitats





EPSL's





rather than definitive at this stage.

Appendix 4: Legislation and Planning Policy

New legislation (2020)

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 came into force when Britain left the European Union on 31st January 2020. It covered amendments relevant to this survey to:

Wildlife and Countryside Act 1981: England and Wales (x1 amendment)

Conservation of Habitats and Species Regulations 2017 (x29 amendments)

LEGAL PROTECTION

National and European Legislation Afforded to Habitats

International Statutory Designations

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are sites of European importance and are designated under the EC Habitats Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (the Habitats Directive) and the EC Birds Directive 2009/147/EC on the conservation of wild birds respectively. Both form part of the wider Natura 2000 network across Europe.

Under the Habitats Directive Article 3 requires the establishment of a network of important conservation sites (SACs) across Europe. Over 1.000 animal and plant species, as well as 200 habitat types, listed in the directive's annexes are protected in various ways:

Annex II species (about 900): core areas of their habitat are designated as sites of Community importance (SCIs) and included in the Natura 2000 network. These sites must be managed in accordance with the ecological needs of the species.

Annex IV species (over 400, including many annex II species): a strict protection regime must be applied across their entire natural range within the EU, both within and outside Natura 2000 sites.

Annex V species (over 90): Member States must ensure that their exploitation and taking in the wild is compatible with maintaining them in a favourable conservation status.

SPAs are classified under Article 2 of the Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds both for rare bird species (as listed on Annex I) and for important migratory species.

SACs and SPAs up to 12 nautical miles from the coast (i.e. 'territorial waters') are afforded protection in the UK under the Conservation of Habitats and Species Regulations 2017 which consolidate all amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994.

The Conservation of Offshore Marine Habitats and Species Regulations 2017 consolidate and update the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007. The 2017 Regulations introduce amendments which transfer responsibility for European nature conservation in the Welsh offshore region to Welsh Ministers. This gives Welsh Ministers similar powers in Welsh offshore waters to those currently exercised by Scottish Ministers in Scottish offshore waters. These regulations transpose into national law Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive), and elements of Council Directive 2009/147/EC on the conservation of wild birds (Wild Birds Directive) in the UK offshore area. They came into force on 30th November 2017. These regulations apply to the UK's offshore marine area which covers waters beyond 12 nautical miles, within British Fishery Limits and the seabed within the UK Continental Shelf Designated Area. The Conservation of Habitats and Species Regulations 2017 form the legal basis for the implementation of the Habitats and Birds Directives in terrestrial areas and territorial waters out to 12nm in England and Wales (including the inshore marine area) and to a limited extent in Scotland and Northern Ireland.

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention covers all aspects of wetland conservation and recognises the importance of wetland ecosystems in relation to global biodiversity conservation. The Convention refers to wetlands as "areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres".

However, they may also include riparian and coastal zones. Ramsar sites are statutorily protected under the Wildlife & Countryside Act 1981 (as amended 01.04.

National Statutory Designations

Sites of Special Scientific Interest (SSSI) are designated by nature conservation agencies in order to conserve key flora, fauna, geological or physio-geographical features within the UK. The original designations were under the National Parks and Access to the Countryside Act 1949 but SSSIs were then re-designated under the Wildlife & Countryside Act 1981 (as amended). As well as reinforcing other national designations (including National Nature Reserves), the system also provides statutory protection for terrestrial and coastal sites which are important within the European Natura 2000 network and globally.

Local Statutory Designations

Local authorities in consultation with the relevant nature conservation agency can declare Local Nature Reserves (LNRs) under the National Parks and Access to the Countryside Act 1949. LNRs are designated for flora, fauna or geological interest and are managed locally to retain these features and provide research, education and recreational opportunities.

Non- Statutory Designations

All non-statutorily designated sites are referred to as Local Wildlife Sites (LWS) and can be designated by the local authority for supporting local conservation interest. Combined with statutory designation, these sites are considered within Local Development Frameworks under the Town and Country Planning system and are a material consideration during the determination of planning applications. The protection afforded to these sites varies depending on the local authority involved.

Regionally Important Geological Sites (RIGs) are the most important geological and geomorphological areas outside of statutory designations. These sites are also a material consideration during the determination of planning applications.

The Hedgerow Regulations 1997

The Hedgerow Regulations 1997 are designed to protect 'important' countryside hedgerows. Importance is defined by whether the hedgerow (a) has existed for 30 years or more; or (b) satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

Under the Regulations, it is against the law to remove or destroy hedgerows on or adjacent to common land, village greens, SSSIs (including all terrestrial SACs, NNRs and SPAs), LNRs, land used for agriculture or forestry and land used for the keeping or breeding of horses, ponies or donkeys without the permission of the local authority. Hedgerows 'within or marking the boundary of the curtilage of a dwelling-house' are excluded.

National and European Legislation Afforded to Species

The Habitats Directive

The EC Habitats Directive aims to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore wild species listed on the Annexes to the Directive at a favourable conservation status, introducing robust protection for those species of European importance. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2017 (the Conservation Regulations) and the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended). The following notes are relevant for all species protected under the EC Habitats Directive:

In the Directive, the term 'deliberate' is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.

The Habitats Regulations do not define the act of 'migration' and, therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes are also considered.

In order to obtain a European protected species mitigation (EPSM) licence, the application must demonstrate that it meets all of the following three 'tests':

- The action(s) are necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment;
- There is no satisfactory alternative; and
- The action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

The Wildlife and Countryside Act (WCA) 1981 (as amended)

The Wildlife and Countryside Act (WCA) 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1979, implemented 1982) and implements the species protection requirements of EC Birds Directive 2009/147/EC on the conservation of wild birds in Great Britain (the birds Directive). The WCA 1981 has been subject to a number of amendments, the most important of which are through the Countryside and Rights of Way (CRoW) Act (2000) and Nature Conservation (Scotland) Act 2004.

Other legislative Acts affording protection to wildlife and their habitats include:

- Deer Act 1991
- Natural Environment & Rural Communities (NERC) Act 2006
- Protection of Badgers Act 1992
- Wild Mammals (Protection) Act 1996

Badgers

Badgers Meles are protected under The Protection of Badgers Act 1992 which makes it an offence to:

- Wilfully kill, injure, take, or attempt to kill, injure or take a badger
- Cruelly ill-treat a badger, including use of tongs and digging
- Possess or control a dead badger or any part thereof
- Intentionally or recklessly damage, destroy or obstruct access to a badger sett or any part thereof
- Intentionally or recklessly disturb a badger when it is occupying a badger sett

- Intentionally or recklessly cause a dog to enter a badger sett
- Sell or offers for sale, possesses or has under his control, a live badger

Effects on development works:

A development licence will be required from the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) for any development works likely to affect an active badger sett, or to disturb badgers whilst they occupy a sett. Guidance has been issued by the countryside agency's to define what would constitute a licensable activity. It is no possible to obtain a licence to translocate badgers.

Birds

With certain exceptions, all birds, their nests and eggs are protected under Sections 1-8 of the WCA. Among other things, this makes it an offence to:

- Intentionally (or recklessly in Scotland) kill, injure or take any wild bird
- Intentionally (or recklessly in Scotland) take, damage or destroy (or, in Scotland, otherwise interfere with) the nest of any wild bird while it is in use or being built
- Intentionally take or destroy an egg of any wild bird
- Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.
- Intentionally or recklessly obstruct or prevent any wild bird from using its nest (Scotland only)

Certain species of bird, for example the barn owl, bittern and kingfisher receive additional protection under Schedule 1 of the WCA and Annex 1 of the European Community Directive on the Conservation of Wild Birds (2009/147/EC) and are commonly referred to as "Schedule 1" birds.

This affords them protection against:

- · Intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young
- Intentional or reckless disturbance of dependent young of such a bird
- In Scotland only, intentional or reckless disturbance whilst lekking
- In Scotland only, intentional or reckless harassment

Effects on development works:

Works should be planned to avoid the possibility of killing or injuring any wild bird or damaging or destroying their nests. The most effective way to reduce the likelihood of nest destruction in particular is to undertake work outside the main bird nesting season which typically runs from March to August. Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests prior to vegetation clearance.

Schedule 1 birds are additionally protected against disturbance during the nesting season. Thus, it will be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not feasible, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

Reptiles (Amphibians and reptiles)

The sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca*, natterjack toad *Epidalea calamita*, pool frog *Pelophylax lessonae* and great crested newt *Triturus cristatus* receive full protection under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

With the exception of the pool frog, these species are also listed on Schedule 5 of the WCA and they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of reptiles are protected solely under Schedule 5, Section 9(1) & (5) of the WCA, i.e. the adder *Vipera berus*, grass snake *Natrix natrix*, common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis*. It is prohibited to:

• Intentionally or recklessly kill or injure these species.

Effects on development works:

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works likely to affect the breeding sites or resting places amphibian and reptile species protected under Habitats Regulations. A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation, but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow worm, thus avoiding contravention of the WCA.

Water voles

The water vole Arvicola terrestris is fully protected under Schedule 5 of the WCA. This makes it an offence to:

- Intentionally kill, injure or take (capture) water voles
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection
- Intentionally or recklessly disturb water voles while they are occupying a structure or place used for shelter or protection

Effects on development works:

If development works are likely to affect habitats known to support water voles, the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) must be consulted. It must be shown that means by which the proposal can be re-designed to avoid contravening the legislation have been fully explored e.g. the use of alternative sites, appropriate timing of works to avoid times of the year in which water voles are most vulnerable, and measures to ensure minimal habitat loss. Conservation licences for the capture and translocation of water voles may be issued by the relevant countryside agency for the purpose of development activities if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will then only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of works.

Otters

Otters Lutra lutra are fully protected under the Conservation Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Otters are also currently protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

An EPSM Licence issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works likely to affect otter breeding or resting places (often referred to as holts, couches or dens) or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, and rear young). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored

Bats

All species are fully protected by Habitats Regulations 2010 as they are listed on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. All bats)
- Deliberate disturbance of bat species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Bats are afforded the following additional protection through the WCA as they are included on Schedule 5:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

An EPSM Licence issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works are likely to affect a bat roost or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSM licence. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Dormice

Hazel Dormice Muscardinus avellanarius are fully protected under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Dormice are also protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

Works which are liable to affect a dormice habitat or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSM licence issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales (NB: Hazel Dormouse are entirely absent from Scotland)). The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

White clawed crayfish

There is a considerable amount of legislation in place in an attempt to protect the White-clawed crayfish *Austropotamobius pallipes*. This species is listed under the European Union's (EU) Habitat and Species Directive and is listed under Schedule 5 of the Wildlife and Countryside Act (1981). This makes it an offence to:

- Protected against intentional or reckless taking
- Protected against selling, offering or advertising for sale, possessing or transporting for the purpose of sale

It is also classified as Endangered in the IUCN Red List of Endangered Species. As a result of this and other relevant crayfish legislation such as the Prohibition of Keeping of Live Fish (Crayfish) Order 1996, a series of licences are needed for working with White-clawed and non-native crayfish. These are:

- A licence to handle crayfish (therefore survey work) in England
- A licence for the keeping of crayfish in England and Wales with an exemption for Signal crayfish (England).
- People in the post-code areas listed with crayfish present prior to 1996 do not need to apply for consent for crayfish already established. It does not, however, allow any new stocking of non-native crayfish into waterbodies. Consent for trapping of non-native crayfish for control or consumption is most likely to be granted in Thames and Anglian regions in the areas with "go area" postcodes.
- Harvesting of crayfish is prohibited in much of England and in any part of Scotland and Wales.

Effects on development works:

The relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will need to be consulted about development which could impact on a watercourse or wetland known to support white clawed crayfish. Conservation licences for the capture and translocation of crayfish can be issued if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of the works.

Wild Mammals (Protection Act) 1996

All wild mammals are protected against intentional acts of cruelty under the above legislation. This makes it an offence to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

To avoid possible contravention, due care and attention should be taken when carrying out works (for example operations near burrows or nests) with the potential to affect any wild mammal in this way, regardless of whether they are legally protected through other conservation legislation or not.

Legislation afforded to Plants

With certain exceptions, all wild plants are protected under the WCA. This makes it an offence for an 'unauthorised' person to intentionally (or recklessly in Scotland) uproot wild plants. An authorised person can be the owner of the land on which the action is taken, or anybody authorised by them.

Certain rare species of plant, for example some species of orchid, are also fully protected under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended). This prohibits any person from:

- Intentionally (or recklessly in Scotland) picking, uprooting or destruction of any wild Schedule 8 species (or seed or spore attached to any such wild plant in Scotland only)
- Selling, offering or exposing for sale, or possessing or transporting for the purpose of sale, any wild live or dead Schedule 8 plant species or part thereof
- In addition to the UK legislation outlined above, several plant species are fully protected under Schedule 5 of The Conservation of Habitats and Species Regulations 2010. These are species of European importance. Regulation 45 makes it an offence to:
- Deliberately pick, collect, cut, uproot or destroy a wild Schedule 5 species
- Be in possession of, or control, transport, sell or exchange, or offer for sale or exchange any wild live or dead Schedule 5 species or anything derived from such a plant.

Effects on development works:

An EPSM licence will be required from the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) for works which are likely to affect species of planted listed on Schedule 5 of the Conservation or Habitats and Species Regulations 2010. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Invasive Species

Part II of Schedule 9 of the WCA lists non-native invasive plant species for which it is a criminal offence in England and Wales to plant or cause to grow in the wild due to their impact on native wildlife. Species included (but not limited to):

- Japanese knotweed Fallopia japonica
- Giant hogweed Heracleum mantegazzianum
- Himalayan balsam Impatiens glandulifera

Effects on development works:

It is not an offence for plants listed in Part II of Schedule 9 of the WCA 1981 to be present on the development site, however, it is an offence to cause them to spread. Therefore, if any of the species are present on site and construction activities may result in further spread (e.g. earthworks, vehicle movements) then it will be necessary to design and implement appropriate mitigation prior to construction commencing.

Injurious weeds

Under the Weeds Act 1959 any land owner or occupier may be required prevent the spread of certain 'injurious weeds' including (but not limited to):

- Spear thistle Cirsium vulgare
- Creeping thistle *Cirsium arvense*
- Curled dock *Rumex crispus*
- Broad-leaved dock Rumex obtusifolius
- Common ragwort Senecio jacobaea

It is a criminal offence to fail to comply with a notice requiring such action to be taken. The Ragwort Control Act 2003 establishes a ragwort control code of practice as common ragwort is poisonous to horses and other livestock. This code provides best practice guidelines and is not legally binding.

National Planning Policy Framework (ENGLAND)

The following sections are relevant to the report:

Making effective use of land

118. Planning policies and decisions should: a) encourage multiple benefits from both urban and rural land, including through mixed use schemes and taking opportunities to achieve net environmental gains – such as developments that would enable new habitat creation or improve public access to the countryside;

Conserving and enhancing the natural environment

170. Planning policies and decisions should contribute to and enhance the natural and local environment by: a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate; d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

171. Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework53; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.

Habitats and biodiversity

174. To protect and enhance biodiversity and geodiversity, plans should: a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity56; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation57; and b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

175. When determining planning applications, local planning authorities should apply the following principles: a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts) adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused; b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest; c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and d)

development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

176. The following should be given the same protection as habitats sites: a) potential Special Protection Areas and possible Special Areas of Conservation; b) listed or proposed Ramsar sites59; and c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

177. The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects) unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.